

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001233**Date Inspected:** 14-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Shen Xue Jun			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	OBG and Tower Mock-up		

**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

The QA inspector performed random fit up verifications at the Tower Mock-up 89 M. The QA inspector found gaps between the fitting lugs and the diaphragms up to 4 mm that were not marked on the steel to identified the increase of the weld size. The QA inspector had a conversation with the QC inspector Xu Bing. The QA inspector recommended to mark the areas with gaps the with minimum weld size required for the welders and the QA and QC personnel. Mr. Xu Bing agreed and directed ZPMC to mark on the steel the actual gap sizes. While the QA inspector was performing fit-up verifications, the QA inspector had a conversation with the Caltrans Task Leader Robert Cuellar. Mr. Robert Cuellar observed a weld with unacceptable profile at the junction of the longitudinal stiffener and the upper side diaphragm weld joint # 16. The QA inspector brought to the attention of Mr. Xu Bing that the weld joint # 16 had unacceptable weld profile. Mr. Xu Bing informed that welder Mr. Li Don at the night shift welded the joint. Mr. Robert Cuellar said to Mr. Xu Bing that Caltrans would request for re-qualification of the welder if the QA inspectors observed welds from the same welder with similar conditions. ZPMC ground flush the weld reinforcement of this particular weld.

The QA inspector observed welder Li Menqian performing welding operations at the interior of the corner connection for the skins C and B on the tower Mock-up 89 M with the flux cored arc welding (FCAW) in the horizontal (2G) position. The QA inspector performed random verifications of the welding parameters. The QA inspector found that welding parameters appeared to be in compliance with the contact documents.

The QA inspector observed ZPMC personnel setting the lower and upper shafts from the Tower Mock-up 114 M

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placing a laser transit at the end locations. The QA inspector requested the dimensions taken by ZPMC. The QC representative Zhang Jiadi (Ken) informed that ZPMC recorded the following values: Lower section measurements 78.2, 78.5, 78.5 and 79.5 and upper section measurements 78.5, 78.5, 78.5 and 78.5. ZPMC was aligning the upper and lower sections before machining the ends to be spliced.

The QA inspector had a conversation with ABF Mr. Kevin Carpenter, the QA inspector informed him that ZPMC was setting the lower and upper shaft on the Tower Mock-up 114 M and the ZPMC did not finalized performing UT examination as per ZPMC fabrication procedure and special provision (scanning for laminar tearing). Mr. Kevin Carpenter said that he did not know and he would bring this on the ABF, ZPMC and Caltrans meeting. After the meeting, Mr. Carpenter said that he was not in the loop on the conversation held over the weekend but ABF and ZPMC had agreed to perform UT verifications with the 0 ° transducer from the C side and the 70° and 60° transducer scanning over the weld from side A (outside) in addition with the scanning required by the AWS D1.5 (2002).

### Summary of Conversations:

As noted above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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